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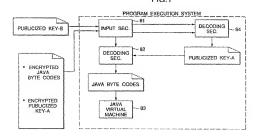
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- (54) Information processing apparatus and method and recording medium

(57) In a program execution environment, an appiration program that was encypted by using secret key-A is supplied to a decoding section 82, and publicized key-B and an encrypted publicized key-A (corresponding to secret key-A) that was encrypted by using secret key-B corresponding to publicized key-B are supplied to a decoding section 84. The decoding section 84 decodes the encrypted publicized key-A by using publicized key-B and supplies a resulting publicized key-A to

the decoding section 82. The decoding section 82 decodes the encrypted application program by using publicized key that its supplied from the decoding section 84 and supplies Java byte codes as a decoding result to a Java virtual machine 83. The Java virtual machine 83. Java virtual machine 83. The Java virtual machine 83 interprets and executes the Java byte codes that are supplied from the decoding section 82. As a result, it becomes possible to allow only programs developed by a legitimate software developer to be executed in a certain program execution environment.

FIG.1





EUROPEAN SEARCH REPORT

Application Number EP 98 30 3173

	DOCUMENTS CONSIDI	ERED TO BE RELEVANT			
Category	Cisation of document with in of relevant passa	dication, where appropriate, ges	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CLS)	
Х	EP 0 706 275 A (IBM 10 April 1996 (1996 * abstract *	1-3,5-9	606F1/00		
Υ	* page 6, line 40 - figures 2-5 *	10-15			
Y	US 4 757 534 A (OSE 12 July 1988 (1988- * column 17, line 3	1,2,5-9	5-9		
Y	* column 2, line 25	- column 4, line 45 *	3		
Y	EP 0 121 853 A (BUR 17 October 1984 (19 * page 4, last para paragraph 3; claim	1-3,5-9	-9		
у			10-15		
Y	* page 8, last para paragraph 2 *	7-9			
A	ANONYMOUS: "Smart Card Protection by the Use of Dynamic Signature Verification One-Way Codes" BM IECHNICAL DISCLOSURE BULLETIN, IBM CORP. NEW YORK, US, vol. 27, no. 8, 1 January 1985 (1985-01-01), page 4710, xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx			HO4L GOSF	
A	US 4 168 396 A (BES 18 September 1979 (* abstract; figure	1979-09-18}	1-3,5-15		
	-The present search report has b				
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X parti Y parti dotu A tech O . non	FIGURE OF CENTED DOCUMENTS Cularly relevant if belon along cularly relevant if belon along cularly relevant if combined with anoth month of the same category noticinate background written disclosure making disclosure	T - theory or princ E - earlier patient after the feing or O - document cite L - document dite	ple underlying \$10 is focument, but public late I in the application	shod on, or	



EUROPEAN SEARCH REPORT EP 98 30 3173

	DOCUMENTS CONSID	ERED TO BE RELEVANT		
Category	Citation of document with it of relevant pass:	ndication, where appropriate, ages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (INLCI.6)
Y	CORP. NEW YORK, US.	ENERATION* OSURE BULLETIN, IBM pril 1997 (1997-04-01), 246	10-15	
Y,P	BERG C: "How do I create a signed applet?" Applet?" JOURNAL, M&T PUBL., REDWOOD CITY, CA., US, vol. 22, no. 8, August 1997 (1997-08), pages 109-111,122, XP002140406 155N: 1044-789X * the whole document *			
A,P	SUAN-SUAN CHEW ET A authentication synthematication synth	em for Internet HD APPLICATIONS OMPSAC '97 WENTY-FIRST ANNUAL NGTON, DC, USA 13-15 HITOS, CA, USA, IEEE 17-08-13), pages	10-15	TEOMRICAL FIELDS SEARCHED (INC.LS)
****	-The present search report has			
	Place of security	26 March 2004	Pol	er, H
Munisch CATEGORY OF CITED DOCUMENTS X. particularly, relevant a basen atting Y. particularly relevant all combined with another document of the partner sategory A technological background		T : theory or principle E : earlier patient doc after the Sing dos by U : document deal in	25 March 2004 Bek T : through or principle underlying the in E , earlier patient document, but public after the Stag stock O : document load in the application L document load for other resource. 5 , marrisper of the same patient family.	



Application Number

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CLAIMS INCUF	HRING FEES
The present Europe	ean patent application comprised at the time of filing more than ten claims.
report has	of the claims have been paid within the prescribed time limit. The present European search been drawn up for the first lien claims and for those claims for which claims tees have namely claim[4]:
No claims been draw	lees have been paid within the prescribed time limit. The present European search report has in up for the first ten claims.
LACK OF UNIT	Y OF INVENTION
	n considers that the present European patent application does not comply with the ty of invention and relates to several inventions or groups of inventions, namely:
see sheet	В
	search lees have been paid within the fixed lime limit. The present European search report has rr up for all claims.
As all sear did not inv	rchable claims could be searched without effort justifying an additional fee, the Search Division ite payment of any additional fee.
search rep	of the further search fees have been paid within the fixed time limit. The present European orth has been drawn up for those pains of the European patent application which relate to the in respect of which search fees have been paid, namely claims:
report has	te further search fees have been paid within the fixed time limit. The present European search been drawn up to those parts of the European patent application which relate to the invention oned in the claims, namely claims.
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LACK OF UNITY OF INVENTION SHEET B

Application Number EP 98 30 3173

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3.5-6.7-9

Information processing apparata, methods and recording media for encrypted programs being decrypted using a first and second key and optionally a third key.

2. claim: 4

Information processing apparata, methods and recording media for encrypted programs being decrypted using a plurality of first keys and a second key

3. claims: 10-15

Information processing apparata, methods and recording media for checking program signatures using a first and second key $\,$

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

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This annex lists the patent family members relating to the patent documents divid in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is no way faible for these particulars which are merely given for the purpose of information.

26-03-2004

Patent document cited in search report		Publication date		Patent family member(s)		Publication date	
EP 0706275	A	10-04-1996	CA EP US	2157971 9706275 5956408	A2	16-03-1996 10-04-1996 21-09-1999	
US 4757534	A	12-07-1988	CA DE DE EP JP JP	1238427 3587072 3587072 0191162 1630801 2060007 61145642	D1 T2 A2 C B	21-06-1988 18-03-1993 12-08-1993 20-08-1986 26-12-1991 14-12-1990 03-07-1986	
EP 0121853	A	17-10-1984	CA EP JP	1213069 0121853 59186046		21-10-1986 17-10-1984 22-10-1984	
U5 4168396	A	18-09-1979	US	4278837	A	14-07-1981	

B For more details about this annex : see Officeal Journal of the European Patent Office, No. 12/82